

SYLLABUS

INTERNATIONAL EUROPEAN
UNIVERSITY



SCHOOL OF
MEDICINE

PHARMACOLOGY

2023




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Discipline 

 PHARMACOLOGY

Teacher(s) 


 D. in Pharmacy, Associate Professor Maryna Ostapets
D. in Pharmacy, Shostak Lyubov

Profile of the teacher(s) 

 <https://medicine.ieu.edu.ua/pro-yemsh/kafedry/kafedra-fundamentalnykh-dystsyplin>

Consultations


Face-to-face consultations

 Third Tuesday of the month from 15:00 to 16:00

Online consultations

 Third Wednesday of the month from 15:00 to 16:00


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Discipline page 

 <https://medicine.ieu.edu.ua/pro-yemsh/kafedry/kafedra-fundamentalnykh-dystsyplin>

Form of final control

test	differentiated test	exam
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1 Brief summary of the discipline

The programme in the discipline "Pharmacology" is designed for students under the educational and professional programme "Medical care", second (master's) level of higher education in specialty 222 "Medicine", field of knowledge 22 "Health care", qualification "Master of Medicine. Doctor".

2 Prerequisite for the course

The course is based on the previous knowledge of medical biology, medical physics, medical chemistry, biological and bioorganic chemistry, normal and pathological physiology, and Latin.

3 Purpose and objectives of the discipline

The aim of teaching the discipline "Pharmacology" is to develop students' theoretical knowledge and practical skills in the basic principles of justifying the rational and safe use of medicines for the treatment and prevention of diseases. Achievement of this goal will allow students to prepare for practical activities, high-quality performance of functional duties related to the rational choice of medicines, independent preparation of pharmacotherapy regimens and their further implementation.

The main objectives of the discipline "Pharmacology" are:

Providing students with theoretical knowledge on determining the group affiliation of medicines, their pharmacokinetics, pharmacodynamics, manifestations of possible side effects, symptoms of overdose, measures to prevent and help eliminate adverse reactions;

Substantiation of the main indications for prescription and interaction with other medicines and acquisition of practical skills in writing prescriptions for drugs in various dosage forms

4 Learning outcomes

Determine the tactics of providing emergency medical care based on the diagnosis of an emergency
Determine the source and/or location of the necessary information depending on its type; obtain the necessary information from a specific source; process and analyse the information received. To comply with the requirements of ethics, bioethics and deontology in their professional activities.

To organise the necessary level of individual safety (own and persons under his/her care) in case of typical dangerous situations in the individual field of activity.

5 ECTS Credits

6 credits / 180 academic hours. Lectures - 24 hours, practical work - 72 hours, independent work - 84 hours.



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Structure of the discipline

Topic titles	Lect.	Pract.	Ind.
Section I. Medicinal formulation.			
1. Main provisions of the Law of Ukraine "On Medicinal Products". Introduction to medicinal formulation. Solid dosage forms.	2	3	2
2. Soft dosage forms: classification, prescribing rules, routes of administration and features of use. Liquid dosage forms. Solutions for external and internal use: classification, prescribing rules, routes of administration and features of use.	-	3	4
3. Liquid dosage forms (infusions, decoctions, emulsions, mixtures, tinctures, liquid extracts, new-galenic preparations). Rules for prescribing, routes of administration. Dosage forms for ін'єкцій: requirements for ін'єкційних solutions, prescribing rules, routes of administration and specifics of use.	-	3	4
Section II. Drugs affecting the central and peripheral nervous system.			
4. Drugs that affect the transmission of excitation in cholinergic synapses. Cholinergic drugs that affect M-H cholinergic receptors. Anticholinesterase agents. Cholinesterase reactivators.	2	3	2
5. Cholinergic drugs that selectively act on M-N cholinergic receptors. M-N cholinomimetics, M-N cholinergic agents.	-	3	4
6. Pharmacology of drugs affecting the transmission of excitation at adrenergic synapses: adrenomimetics, sympathomimetics, antiadrenergic drugs, sympatholytics.	2	3	2
7. Pharmacology and toxicology of ethyl alcohol and drugs for the treatment of alcoholism. Sleeping pills. Antiepileptic, antiparkinsonian drugs.	-	3	4
8. Pharmacology of narcotic and non-narcotic analgesics. Substances that cause addiction.	2	3	4
9. Psychotropic drugs with a depressant type of action: antipsychotics, tranquillisers, sedatives.	2	3	4
10. Psychostimulants. Antidepressants. Drugs used for bipolar diseases and PAD. Medicines that affect the nucleotinic system.	2	3	4
Section III. Drugs affecting the function of executive organs and metabolism.			
11. Pharmacology of medicines that affect the function of the respiratory system. Medicinal products used for the treatment of bronchial asthma and pulmonary oedema.	2	3	4



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12. Diuretics. Pharmacology of drugs that reduce the content of uric acid in the body. Drugs that affect the tone and contractile activity of the myometrium.	-	3	4
13. Medicinal products used in case of coronary artery disease.	2	3	2
14. Antiatherosclerotic drugs.	-	3	2
15. Antihypertensive drugs. Antiarrhythmic drugs.	2	3	4
16. Medicinal products affecting the function of digestive organs (medicinal products affecting appetite; medicinal products regulating gastric gland secretion; gastroprotectors, medicinal products affecting pancreatic zonal secretory function; choleric and medicinal products affecting gastrointestinal motility).	2	3	4
17. Pharmacology of drugs affecting haematopoiesis and blood coagulation system	2	3	4
18. Preparations of hormones of the hypothalamus, pituitary gland, thyroid gland. Insulin preparations and oral hypoglycaemic agents. Preparations of adrenal cortex hormones. Sex hormone preparations and anabolic steroids.	2	3	2
19. Anti-inflammatory drugs. Treatment of rheumatoid arthritis. Antiallergic and immunotropic medicinal products.	-	3	4
Section IV. Antibacterial agents. General pharmacology.			
20. Pharmacology of antibiotics 1. (Pharmacology of betalactam antibiotics). Pharmacology of antibiotics 2. (Pharmacology of macrolides, lincosamides, tetracyclines, aminoglycosides, cyclic polypeptides).	-	3	4
21. Sulfonamide drugs. Synthetic antimicrobial agents of different chemical structures. Pharmacology of fluoroquinolones.	-	3	4
22. Pharmacology of anti-tuberculosis drugs. Antispirochetic, antiprotozoal, antifungal and anthelmintic drugs.	-	3	4
23. Antiviral drugs. Antiseptic and disinfectant drugs. Pharmacology of calcium, potassium and sodium preparations. Pharmacology of antitumour drugs	-	3	4
24. Toxicology. Basic principles of treatment of acute poisoning with drugs and poisons. General pharmacology. Pharmacokinetics. Pharmacodynamics. Mechanisms of action of drugs.	-	3	4
Total hours	24	72	84

1. Drugs and chemicals that cause abuse, drug and substance abuse. Medico-social aspects and methods of pharmacotherapy.
2. Modern cardiotonic drugs.
3. Hypertensive drugs.
4. Antidepressants.
5. Modern concepts of pharmacotherapy of gastric ulcer and duodenal ulcer. Gastroprotectors and



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antacids.

6. Drugs used in the treatment of liver and biliary tract diseases
7. Antiatherosclerotic drugs.
8. Medicines affecting phosphorus-calcium metabolism. Principles of osteoporosis treatment.
9. Ethyl alcohol and drugs for the treatment of alcoholism.
10. Adaptogens.
11. Drugs that affect fibrinolysis
12. Antihormonal agents.
13. Enzyme preparations, coenzymes and antienzymes.
14. Vitamin preparations, the concept of hypo- and hypervitaminosis.
15. Antimalarial drugs.
16. Drugs for the treatment of leishmaniasis.
17. Modern problems and features of the use of anticancer drugs.
18. Modern theory of the action of drugs on the body.
19. Antidotism and basic antidotes.
20. The importance of genetic factors in the action of drugs

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Selective tasks

1. Create situational test tasks
2. Create multimedia presentations on the topics of practical classes
3. Creating biological crosswords on the topics of practical classes
4. Making posters with contours of physiological regulation of functions
5. Participation in the work of the student scientific club
6. Participation in student scientific and practical conferences
7. Organising and visiting thematic museums
8. Publishing abstracts of scientific conference reports in co-authorship with a teacher.

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Signs of discipline

Term of Teaching	Semester	International disciplinary integration	Course (year of study)	Cycles: general training/ vocational training/ free choice
1 semester	V, VI	Yes	3st	General training

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Evaluation system and requirements

The current performance of students is assessed on a 4-point scale (2; 3; 4; 5) at each practical, taking into account the approved assessment criteria for the relevant discipline. The student must receive a grade for each topic for further conversion of grades into points on a multi-point (200-point) scale.

Assessment criteria for current learning activities:

Excellent ("5") - the student has correctly answered 90-100% of the A-format tests (from the Krok-2 database). The student solves situational problems of increased complexity, is able to summarise the material.

Good ("4") - the student correctly answered 70-89% of the tests of format A. Possesses the necessary practical skills and techniques for their implementation to an extent exceeding the required minimum.

Satisfactory ("3") - the student correctly answered 50-69% of the tests of format A. Has only the mandatory minimum of research methods.

Unsatisfactory ("2") - the student correctly answered 50% of the tests of format A. When answering and demonstrating practical skills, he/she makes significant, gross mistakes.

Assessment of students' independent work in preparation for classroom practical classes is carried out during the current control of the topic at the relevant classroom.

The semester credit is assessed on a two-point scale (passed/not passed) and a 200-point scale by determining the arithmetic mean of the current grades for each practical lesson on a 4-point scale and its subsequent conversion to 200-point scale. The minimum number of points that a student must score is 120.



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The final control performs a controlling function, is conducted to assess the results of training at a certain educational qualification level or at its individual completed stages.

It is conducted in the form of an examination to determine the content of students' knowledge in terms of volume, quality and depth, as well as the ability to apply it in practical activities. The final examination takes into account the results of passing all types of academic work in accordance with the structure of the curriculum.

<https://ieu.edu.ua/docs/rate-of-study.pdf>

11 Conditions for admission to the final control

Students who have completed all types of work and assignments provided for in the curriculum for the semester in accordance with the discipline, attended all classes provided for in the curriculum, written and submitted a medical history and have an average score for current academic activities of at least "3" (72 points on a 120-point scale) are admitted to the semester final control.

<https://ieu.edu.ua/docs/rate-of-study.pdf>

12 Discipline policy

The policy of the discipline is determined by the requirements that scientific and practical workers impose on students in the study of clinical discipline. The condition for successful educational process is personal compliance of each student of higher education institution with the rules of behaviour adopted both at the university and in society. The future doctor must have a high level of behavioural culture, behave with dignity, tact, and self-control.

The student must be on time for classes and wear academic medical uniform (white coat or surgical suit). The student must adhere to the schedule of the educational process, come to class prepared on the topic of the lesson. During the class, the student must not leave the classroom without the permission of the teacher; use a mobile phone and other means of communication and information without the permission of the teacher, engage in outside activities, distract other students. When writing different types of papers, students must adhere to the rules of academic integrity.

12 Discipline policy

The teacher must adhere to the curriculum, objectively assess the knowledge and skills of students. During the educational process, the teacher must be aware of anti-corruption measures and not engage in corrupt activities.

13 Policy on absences and late assignments

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A student who, for valid reasons, confirmed by documentary evidence, was not subject to current control has the right to pass the current control within two weeks after returning to study.

A student who was absent from classes without valid reasons, did not participate in the current control activities, did not eliminate academic debt, is not allowed to take the final semester control of knowledge in this discipline, and on the day of the exam, the academic staff member gives the grade "not admitted" in the examination record. Retaking the differentiated test in the discipline is assigned subject to the completion of all types of educational, independent (individual) work provided for in the working curriculum of the discipline and is carried out in accordance with the schedule of liquidation of academic debt approved by the directorate.

<https://ieu.edu.ua/docs/050.pdf>

14 Academic integrity policy

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Participants in the educational process are guided by the principles of academic integrity



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<https://ieu.edu.ua/docs/011.pdf>

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Recommended sources of information

Main literature:

1. Pharmacology: Textbook for students of medical faculties / I.S. Chekman, N.O. Gorchakova, L.I. Kazak et al: New Book, 2019. 784 c.
2. Skakun MP, Posokhova KA Pharmacology: Textbook, Ternopil: Ukrmedkniga, 2019. 740 c.
3. Pharmacology: a textbook for students of medical and dental faculties of higher medical educational institutions / Chekman IS, Bobyrev VM, Kresyun VY [et al: Nova Knyha, 2020. 427 p.: ill.
4. Drogovoz SM, Shchokina KG Pharmacology in the palms of your hands, Kharkiv: Pleiades, 2019. 112 c.

Supplementary:

1. Kaplan USMLE Step 1 Lecture Notes 2018 Pharmacology. Kaplan Medical, 2018, 321 P.
2. Drogovoz S.M. Pharmacology pharmacology to help the doctor, pharmacist, student: Textbook, X.: KhAI Publishing Centre, 2012. 480 C.
3. Oleshchuk O.M., Posokhova K.A. Fundamentals of medicinal formulation: a textbook. Ternopil: TSMU, 2019. 92 c.
4. Skakun M.P. Fundamentals of clinical epidemiology and evidence-based medicine: Textbook, Ternopil: TSMU, 2008. 372 c.
5. "Pharmacology - visually" (Pharmacology in tables, diagrams and figures) Study guide, Drogovoz S.M., Oleshchuk O.M., Khomenko V.M. et al. Kharkiv: 2021. 204 c.
6. Lippincott illustrated reviews: Pharmacology. [edited by] Karen Whalen; collaborating editors, Carinda Feild; Rajan Radhakrishnan. Seventh edition. 7th ed., 2019.
7. Basic and Clinical Pharmacology, 12th edition, B.G. Katzung (editor), The McGraw Hill Companies, 2012.
8. Posokhova K.A., Viktorov O.P. Antibiotics (properties, use, interaction): Study guide, Ternopil: TSMU, 2005. 296 c.
9. Samura B.A. General pharmacokinetics: monograph. Ternopil: TSMU, 2009. 356 c.
10. Stepaniuk G.I. Pharmacology. Course of lectures, Vinnytsia, 2011. 373 c

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Tips for successful studying on the course

If you want to be successful in this discipline, you need to:

1. Be active, persistent, inquisitive, consistent
2. Be tidy and polite
2. Systematically prepare for practical classes
3. Perform tasks for independent work and defend them in class.
3. To be present at the class in a medical gown
4. To solve tests and tasks independently, to work actively in class.
5. Prepare presentations and crosswords on the discipline. Participate in student scientific conferences and engage in research work in the department's scientific circles.

I wish you perseverance, dedication and motivation to learn. And then success will come to you! See you in class!

Don't forget your medical gowns!